

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

1. (Original) A recording medium having recorded thereon a video stream and a graphics stream, wherein

the video stream constitutes a moving picture, and

the graphics stream

constitutes a plurality of menu presentations to be composited with the moving picture, and

includes a plurality of Display Sets that constitute respective menu presentations, each menu presentation being composed of one or more pages, and each Display Set including version information that shows whether or not content of each of the pages in the Display Set has changed with respect to a previous Display Set.
2. (Original) The recording medium of Claim 1, wherein

the graphics stream and the video stream are multiplexed together on the recording medium,

each Display Set includes a timestamp showing an arbitrary point in time on a playback time axis of the video stream, and

menu presentation according to any one of the Display Sets commences at the point in time shown by the timestamp included in the Display Set.

3. (Original) The recording medium of Claim 2, wherein
each Display Set further includes user interface information for instructing a playback apparatus to automatically composite the menu presentation with the moving picture when the point in time shown by the timestamp is passed.

4. (Original) The recording medium of Claim 2, wherein
each Display Set further includes user interface information for instructing a playback apparatus to, when the point in time shown by the timestamp is passed, composite the menu presentation with the moving picture if a call operation for a pop-up menu is received from a user.

5. (Withdrawn) The recording medium of Claim 1, wherein
the plurality of Display Sets belong to a single Epoch, the Epoch being a unit of management, on a playback time axis, during which presence of management data in a memory that stores graphics data in a playback apparatus is continuous, and
a Display Set that is first in the Epoch includes graphics data that constitutes the menu presentation, and Display Sets that are subsequent to the first Display Set lack graphics data that effects an overwrite of the graphics data of the first Display Set in the memory.

6. (Previously Presented) The recording medium of Claim 1, wherein
the graphics stream is composed of a plurality of pieces of segment information,
and
each piece of segment information is one of (i) a graphics object segment having a plurality of pieces of graphics data, and (ii) a composition segment defining a menu screen composition and a display time.

7. (Currently Amended) A playback apparatus comprising:

a video decoder operable to decode a video stream, to obtain a moving picture; and

a graphics decoder operable to decode a graphics stream, to obtain a menu presentation that is to be composited with the moving picture,

wherein the graphics stream includes a plurality of Display Sets that constitute the menu presentation, and

the graphics decoder includes:

a composition buffer operable to store a composition segment, the composition segment including page information that corresponds to pages in the menu presentation; and

a write control unit operable to

when a new Display Set is read in accordance with progression of playback of the video stream and when a page version number included in, among a plurality of pieces of page information included in the new Display Set, a piece of page information corresponding to a currently displayed page is incremented more than a page version number of the currently displayed page, use the pieces of page information included in the new Display Set to update contents of a graphics plane, compare a page version number in each piece of page information in the read Display Set with a page version number in a corresponding piece of page information stored in the composition buffer, to detect whether contents of the piece of page information have been updated, and

~~when contents of a piece of page information have been updated, use the updated piece of page information to overwrite the corresponding piece of page information in the composition buffer.~~

8. (Currently Amended) The playback apparatus of Claim 7, further comprising:
a display control unit,
wherein, if the contents of the graphics plane are updated, the display control unit
re-presents the currently displayed page ~~a piece of page information is overwritten, a page,~~
~~among the plurality of pages in the menu display, corresponding to the rewritten piece of page~~
~~information is re-presented.~~

9. (Currently Amended) The playback apparatus of Claim 8, further comprising:
a graphics plane operable to store uncompressed graphics that compose the menu
presentation,
wherein the graphics decoder further includes:
a processor operable to decode graphics included in any one of the Display Sets;
and
an object buffer operable to store uncompressed graphics obtained by the
processor, and
re-presenting of a page is performed by reading, from among the uncompressed
graphics in the object buffer, uncompressed graphics referred to by the pieces ~~piece~~ of page
information included in the new Display Set ~~stored as a result of the overwriting,~~ and writing the
read uncompressed graphics to the graphics plane.

10. (Original) The playback apparatus of Claim 9, wherein
the graphics stream is recorded on the recording medium multiplexed with a video
stream,
the page information is stored in a packet, the packet including a presentation time
stamp that shows an arbitrary point in time on a playback time axis of the video stream, and

the writing to the graphics plane by the display control unit is complete before a current playback position with respect to the video stream reaches the point in time shown by the presentation time stamp.

11. (Original) The playback apparatus of Claim 10, wherein

the display control unit has the re-presented menu composited with the moving picture at a point at which (i) the current playback position reaches the point in time and (ii) an operation to call a popup menu is has been performed by a user.

12. (Original) The playback apparatus of Claim 10, wherein

the display control unit has the re-presented menu composited with the moving picture at a point at which the current playback position reaches the point in time.

13. (Original) The playback apparatus of Claim 10, wherein

the packet that stores the page information includes a decode time stamp in addition to the presentation time stamp,

the writing from the object buffer to the graphics plane is performed in a duration starting at a point in time shown by the decode time stamp and ending at the point in time shown by the presentation time stamp,

the uncompressed graphics written to the graphics plane constitute graphical button materials on a page, and

the display control unit prohibits any change in a state of the button materials for the duration.

14. (Original) The playback apparatus of Claim 7, wherein
the graphics decoder includes a processor operable to decode graphics data included in the Display Set, and have stored, in the object buffer, uncompressed graphics data obtained as a result of the decoding, and

the processor writes uncompressed graphics to the object buffer when a first Display Set is read, and when each successive Display Set is read, suppresses overwriting of the uncompressed graphics in the object buffer.

15. (Withdrawn) A method of recording to a recording medium, comprising:
a step of generating application data; and
a step of recording the generated application data to the recording medium,
wherein the application data includes a video stream and a graphics stream,
the video stream constitutes a moving picture, and
the graphics stream constitutes a plurality of menu presentations to be composited with the moving picture, and

includes a plurality of Display Sets that constitute respective menu presentations, each menu presentation being composed of one or more pages, and each Display Set including version information that shows whether or not content of each of the pages in the Display Set has changed with respect to a previous Display Set.

16. (Withdrawn) A program for causing a computer to execute playback processing, the program comprising:

program code operable to cause the computer to perform processing to decode a video stream to obtain a moving picture; and

program code operable to cause the computer to perform processing to decode the graphics stream to obtain menu presentations to be composited with the moving picture,

wherein graphics stream includes a plurality of Display Sets that constitute the menu presentations, and

in the decoding of the graphics stream, the computer is caused to perform processing to, when a new Display Set is read in accordance with progression of playback of the moving picture, compare a page version number in each piece of page information in the read Display Set with a page version number in a corresponding piece of page information stored in a buffer in the computer, to detect whether contents of the piece of page information have been updated, and

when contents of a piece of page information have been updated, use the updated piece of page information to overwrite the corresponding piece of page information in the composition buffer.

17. (Withdrawn) A playback method comprising the steps of:

decoding a video stream to obtain a moving picture; and

decoding a graphics stream to obtain a menu presentation, and compositing the menu presentation with the moving picture,

wherein the decoding of the graphics stream includes a procedure to cause a computer to perform processing to, when a new Display Set is read in accordance with progression of playback of the moving picture, compare a page version number in each piece of page information in the read Display Set with a page version number in a corresponding piece of page information stored in a buffer in the computer, to detect whether contents of the piece of page information have been updated, and

when contents of a piece of page information have been updated, use the updated piece of page information to overwrite the corresponding piece of page information in the composition buffer.